the invention, the acceleration effect imposed by the invention can be dependent on the length of the data set (e.g., list).

[0057] The accelerated scrolling can also be depicted as a state machine having states representing different acceleration levels or different rates of acceleration. The particulars of such a state machine will vary widely with implementation.

[0058] **FIG. 5** is a representative acceleration state machine **500** according to one embodiment of the invention. The acceleration state machine **500** has four states of acceleration. A first state **502** provides no acceleration. From the first state **502**, when the speed of a next rotational user input is slow, the acceleration state machine **500** remains at the first state **502**. Alternatively, when the speed of the rotational user input is fast, the acceleration state machine **500** transitions from a first state **502** to a second state **504**. The second state **504** provides 2×acceleration, meaning that the resulting rate of scrolling would be twice that of the first state. When the acceleration state machine **500** is at the second state **504**, when the speed of a next rotational user input is slow, the acceleration state machine **500** transitions back to the first state **502**. Alternatively, when the speed of the next rotational user input is fast, the acceleration state machine **500** transitions from the second state **504** to a third state **506**. The third state **506** provides 4×acceleration, meaning that the rate of scrolling would be four times that of the first state **502** or twice that of the second state **504**. At the third state **506**, when the speed of the next rotational user input is slow, the acceleration state machine **500** transitions from the third state **506** to the first state **502**. Alternatively, when the speed of the next rotational user input is fast, the acceleration state machine **500** transitions from the third state **506** to a fourth state **508**. At the fourth state **508**, 8×acceleration is provided, meaning that the acceleration rate of scrolling is eight times that of the first state **502**, four times that of the second state **504**, or twice that of the third state **506**. At the fourth state **508**, when the speed of the next rotational user input is slow, the acceleration state machine **500** transitions from the fourth state **508** to the first state **502**. Alternatively, when the speed of the next rotational user input is fast, the acceleration state machine **500** remains at the fourth state **508**.

[0059] **FIG. 6** is a flow diagram of next portion determination processing **600** according to one embodiment of the invention. The next portion determination processing **600** is, for example, processing performed by the operation **108** illustrated in **FIG. 1**

[0060] The next portion determination processing **600** receives **602** the modified number of the units. For example, at operation **106** of **FIG. 1**, the number of units was modified **106** by the acceleration factor to determine the modified number of units. A remainder value is then added **604** to the modified number of units. The remainder value pertains to a previously determined remainder value as discussed below. Next, the modified number of units is divided **606** by a chunking value to view a next portion. The next portion is a subset of the data set that is eventually presented on a display device. For example, the next portion can pertain to one or more items in a list when the data set pertains to a list of items. In another example, the next portion can pertain to a segment or position in a audio file when the data set pertains to an audio file. In any case, the remainder value from the operation **606** is then saved **608** for subsequent usage in computing a subsequent next portion. Following the operation **608**, the next portion determination processing **600** is complete and ends. Although the use of the remainder value is not necessary, the scrolling provided by the invention may be smoother to the user when the remainder is carried forward as described above.

[0061] As one example of the scroll processing according to the invention, consider the following exemplary case. Assume that the number of units associated with a rotational user input is 51 units. Also assume that an acceleration factor was determined to be 2. Hence, the modified number of units, according to one embodiment, would then be 102 units (51*2). In one implementation, a previous remainder value (if not stale) can be added to the modified number of units. Assume that the previous remainder value was 3, then the modified number of units becomes 105 (102+3). Thereafter, to determine the next portion of the data set, the modified number of units (105) is then divided by a chunking value (e.g., 5). Hence, the resulting value 20 indicates that the next portion of the data set is to be presented (i.e., displayed on a display device) would be 20 items down (up) in the list from the current item.

[0062] The scroll, list navigation or acceleration amount processing discussed above can be utilized with respect to an audio player having a screen that displays a list of songs, or that provides a scroll bar indicating position of playing within an audio file. Typically, such an audio player typically displays different screens on the display. Each such screen can be individually scrolled through using separate position and acceleration values. Alternatively, the acceleration values can be shared across multiple different screens. Each such screen could be associated with a different list that is partially displayed on the screen, a portion of which is displayed on the screen at a time and, through scrolling, the portion can be altered in an accelerated manner. The file can be a list or represent a scroll bar reflecting play position in a song. Additional details of screens suitable for use with an audio player are described in U.S. Provisional Patent Application No. 60/399,806, filed on Jul. 30, 2002, which is hereby incorporated herein by reference.

[0063] **FIG. 7A** is a perspective diagram of a computer system **650** in accordance with one embodiment of the invention. The computer system **650** includes a base housing **652** that encloses electronic circuitry that performs the computing operations for the computing system **650**. Typically, the electronic circuitry includes a microprocessor, memory, I/O controller, graphics controller, etc. The housing **652** also provides a removable computer readable medium drive **654** in which a removable computer readable medium can be placed so as to electronically or optically read data therefrom. The computer housing **652** is also coupled to a display device **656** on which a screen display can be presented for a user of the computer system **650** to view. Still further, the computer system **650** includes a keyboard apparatus **658**. The keyboard apparatus **658** allows a user to interact with a computer program (application program or operating system) performed by the computer system **650**. In this regard, the keyboard apparatus **658** includes a plurality of keys **660** and a rotational input unit **662**. The rotational input unit **662** allows a user to perform a rotational movement with respect to the rotational input unit **662**. The rotational movement (rotational user input) can then be